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AN ANALYSIS OF SOME OF THE OCULAR SYMPTOMS OBSERVED IN SO-CALLED GENERAL PARESIS.

BY CHARLES, A. OLIVER, M.D.,
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THESE observations were made upon twenty well marked cases of general paralysis of the insane seen at the State Hospital for the Insane at Norristown, Penn., in private practice, and in several private asylums.

The study has been limited to subjects in the so-called second stage of the disease, where the psychical symptoms had become of such a character as to necessitate control, and where motor and sensory degeneration had become more or less manifest.

Care was taken that each subject was seemingly free from any extraneous general disease or local disorder, and that competent and authoritative medical opinion had been given as to the type of the general complaint; besides, the entire study has been limited to the male sex, so as to escape any conflicting and complicating changes that might appear in connection with the many diseases peculiar to the female sex.

OBSERVATIONS.*

First. Direct vision for form, as a rule, slightly reduced from normal.

Second. Direct vision for color, as a rule, slightly subnormal.

Third. Accommodative action, though impossible to obtain any reliable results by various subjective methods, yet objectively (retinoscopy), range and consequent power of accommo-

* A portion of these observations formed a part of the Third Annual Report of the Ophthalmological Department of the State Hospital for the Insane at Norristown, Penn.

dation apparently about normal, or slightly less so in a few instances, for age and refractive error.

Fourth. Visual fields: nothing could be obtained, though seemingly reduced in area, especially in the vertical meridians.

Fifth. Pupils frequently unequal in size; in several instances having a difference of one or two millimeters in their horizontal meridians.

Sixth. Pupils oftentimes ovoid and oval in shape, their long axes being generally opposed to one another. (It must be remembered that if careful examination be made of many pupils in ordinary clinical work amongst the mentally healthy, there will be found a large proportion exhibiting this condition.)

Seventh. In one instance, repeated examinations at two week intervals, revealed a changeable condition of the pupillary form.

Eighth. One iris quite irregular in its pupillary outline, without any evidence of localized change.

Ninth. Irides generally sluggish to light stimulus, and in a few instances, though fairly responsive to accommodation and convergence, yet absolutely immobile to light.

Tenth. With seemingly similar degrees of refractive error, and apparent identical amounts of objective nerve change, the two irides in the same subject frequently unequally mobile to light stimulus, accommodation, and convergence.

Eleventh. In several instances, irides were feebly responsive to efforts for accommodation and convergence only.

Twelfth. In nearly every instance, where light stimulus produced a reflex act, the secondary movement of the iris of the exposed eye was much less marked than is found in the normal eye.

Thirteenth. Irides utterly devoid of any gross peculiarities in comparative tint.

Fourteenth. Insufficiency of the interni present in more than one-half of the cases. Quantitative measurement of the extra ocular muscle enervation impossible to obtain on account of deficient mentality of the subject.

Fifteenth. In a few instances, a peculiar nystagmic action at the release of utmost muscle tension; this being more particularly noticed with the external, internal, and inferior muscles of the globe.

Sixteenth. Optic discs decidedly and unequally grayed in tint, especially in their deepest layers and to their temporal sides; but not more marked, as has been elsewhere noticed, in the left eye.

Seventeenth. Capillarity of nerve substance seemingly lessened, the greatest amount of blood supply being recognized in a rather broad crescentic area to the nasal side of the disc.

Eighteenth. Physiological excavation frequent; usually seen to the outer side of the disc, and extending to the lamina.

Nineteenth. Scleral ring sharply cut, and as a rule, broad; this being more pronounced to the outer side of the nerve.

Twentieth. Broad black pigment crescents, broken and partially absorbed, beyond the scleral ring, frequent to the temporal side of the disc.

Twenty-first. Narrow pigment lines of varying width and different degrees of absorption, beyond scleral ring to the nasal side of the disc.

Twenty-second. Fibre-layer of retina seemingly diminished in thickness, the greatest amount of coarsest striation being seen at the upper and lower borders of the optic nerve.

Twenty-third. Retinal arteries undersized and sometimes slightly tortuous.

Twenty-fourth. Retinal veins (which in the majority of cases were quite tortuous) normal in size, though in several instances somewhat contracted and tapering as they pass into the optic nerve.

Twenty-fifth. Retinal vessels carrying apparently properly colored blood-currents.

Twenty-sixth. Very few lymph reflexes, these being limited to the walls of the main retinal stems.

Twenty-seventh. In one case a deposit of minute yellowish bodies in the retina between the disc and the macula.*

Twenty-eighth. No other gross changes in the retina.

Twenty-ninth. Granular and disturbed condition of the choroid marked in the majority of cases.

* Very much like the hyaline bodies noted by Loring and the "pin-point specks" spoken of by Noyes. Urine was carefully examined, giving negative results.

Thirtieth. Refraction generally hypermetropic, with marked degrees of astigmatism.*

The average age was forty years; weight, one hundred and forty-seven pounds; height, five feet and seven inches; complexion, nine blondes, six brunettes, and five medium; nativity, fourteen born in the United States, one in Germany, one in the East Indies, and four unknown; intra-pupillary space, fifty-five millimeters: corneæ, eleven millimeters in horizontal diameter; pupillary diameter, two and a half millimeters in horizontal meridian.

SUMMARY.

1. The sensory changes herein described, which have been limited to unequal optic-nerve degeneration, decrease of retinal circulation, with subnormal direct and eccentric vision for both form and color, distinctly show lowered sensory-nerve response.

2. The motor symptoms consisting in unequal and feeble movement of the irides, causing inequality and irregularity of pupillary areas, the peculiar form of ataxic nystagmus, the slight loss of ciliary tone, all express want of proper muscle action — true paresis.

3. The peculiarly local conditions shown in the fundus, such as the pigment massings, the crescents of absorption, the disturbed and granular condition of the choroid, etc., all indicate wear and tear of an abused and irritated organ.

4. Therefore, these observations upon the ocular apparatus, which were most probably made during the second stage of the disease known as general paralysis of the insane, show not only local changes, but distinctly demonstrate that the series of sensory-motor disturbances found, are but the peripheral expressions of one of the many indices of gradual loss of neural strength and power in this disease.

* It should be distinctly understood that these conditions were not present in every case, each patient presenting different ratios of the several observations given.

